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Fog Computing

Bermbach | Course Organization

Mobile Cloud Computing Research Group



Research group at EECS department of TU Berlin and part of Einstein Center Digital Future, established in December 2017.

Head: Prof. Dr.-Ing. David Bermbach

Focus areas:

- Data distribution systems & computation platforms for cloud, edge, fog
- Design of serverless and microservice-based applications
- Methods and tools for modern systems benchmarking

www.tu.berlin/mcc/

www.digital-future.berlin

MCC Teaching

Bachelor

Programmieren I
(6 ECTS)

Architektur von
Anwendungs-
systemen (6 ECTS)

Bachelor's Thesis (12 ECTS)



Master

Fog Computing
(6 ECTS)

Cloud Service
Benchmarking
(6 ECTS)

Master's Thesis (30 ECTS)

Projects & Seminars

(Advanced)
Distributed Systems
Prototyping (12 ECTS)

Hot Topics in Fog
Computing (3 ECTS)

Advanced Topics in
IoT (3 ECTS)

Reading Group Cloud
Systems (3 ECTS)

Team for this semester

Prof. Dr.-Ing. David Bermbach

Nils Japke, MSc

Martin Grambow, MSc



Topics of this course

An introduction to fog computing focusing on

- Basics, Cloud Recap
- Data Distribution
- Data Management
- Platforms & Applications
- Testing & Benchmarking
- LEO Edge Computing

Hands-on experience with building fog applications

Insights into current research topics in fog computing

Phase 1: Lectures

Two weekly sessions via Zoom (**Tue + Thu: 16:15-17:45**)

<https://tu-berlin.zoom.us/j/62788396111?pwd=Z0pyYTZleGdJSkhzbjdybUhhREZlZz09>

Meeting ID: 627 8839 6111

Passcode: 802119

You should monitor the ISIS forum for link updates and other announcements.

Phase 2: Reading & Prototyping Assignments

Reading assignment (incl. writing an essay!): (individual)

- Read a few papers, write a short essay
- Submit essay (**due June 27**)
- Peer-review (**due July 11**)
- Submit final essay (**due July 18**)

Prototyping assignment: (group of 2 students)

- Build a prototype using edge (your laptop) and cloud resources
- Prepare a short video demonstrating your prototype + source code (**due July 11**)

Phase 3: Wrap-up

One Q&A lecture on Zoom: **probably July 18**

Final test, **August 1st**

Corona disclaimer: We have to monitor the Corona developments closely. This test needs to be written at TU Berlin. It will NOT be offered as an online test.

Agenda

Lectures (ca. April 20 to June 6)

From Cloud to
Fog Computing

Data
Distribution

Data
Management

Platforms &
Applications

Testing &
Benchmarking

LEO Edge
Computing

Assignments (ca. May 30 to July 18, overlaps slightly w/ lecture period)

Prototyping
Assignment

Reading
Assignment

Wrap-up (ca. July 18 & August 1)

Q&A

Final Test

Registration Process

This course has a limited number of participants
=> three-step registration process

1. Fill out ISIS registration survey (**until April 19, tomorrow!**)
2. Notification from us: you're in/you're not in (**until April 20**)
3. Formal registration in Moses (**until May 7**)
 - ➔ Do it asap, there may be problems.
 - ➔ You can also cancel your registration until the deadline.

Portfolio Exam

Name	Points	Categorie	Duration/Extent
(Deliverable assessment) Prototyping results	25	practical	ca. 4 weeks
(Deliverable assessment) Reading assignment	20	practical	ca. 4 weeks
(Deliverable assessment) Short peer review	5	practical	ca. 1 week
(Examination) Final test	50	flexible	see below (written max. 60 min, oral ca. 15 minutes)

Questions?

